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Assessing the Entrepreneurial Mindset

Fri, January 23, 9:15 to 10:30am, The Downtown Hilton, Second Floor, Esplanade II

Session Submission Type: Competitive Paper Session

Track

Competitive Papers / Pedagogy, Curriculum and Entrepreneurship Education

Session Facilitator

Stephanie Thomason, The University of Tampa

Individual Submissions

Effectual Logic as a Means to Measure Entrepreneurial Mindset in Engineering Students - *Jacob Wheadon*, Purdue University; *Nathalie Duval-Couetil*, Purdue University

Learning Outcomes and Effectiveness in Teamwork-Based Experiential Entrepreneurship Education Assessment - *john L Thompson*, Professor; *Jonathan Matthew Scott*, Teesside University; *Andy Penaluna*, Swansea Metropolitan University

Gender and Culture: Impact on Student Attitudes and Intentions - *Mark Pruett*, University of South Carolina Upstate; *Harun Şeşen*, European University of Lefke, Northern Cyprus

GENDER AND CULTURE: IMPACT ON STUDENT ATTITUDES AND INTENTIONS

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ACADEMIC ABSTRACT

We assess gender differences in nascent entrepreneurs (college students) across four countries to test a model of entrepreneurial intentions incorporating gender, culture, and perceptions about entrepreneurship motives and barriers. We find substantial gender differences. Culture affects intentions, women have lower levels of intentions, men appear more influenced by motives, and women appear more influenced by barriers. The results in China provide interesting exceptions in the analyses and suggest directions for future research specific to that country. As a whole, the study results suggest directions for future research on entrepreneurial intentions. We also discuss implications of the study for entrepreneurship education.

EXECUTIVE SUMMARY

Our study of people who may be at the very beginning of entrepreneurial careers is in contrast to most prior gender research in entrepreneurship, which focused largely on surviving entrepreneurs. Our model of entrepreneurial intentions incorporates gender, culture, and perceptions about entrepreneurship motives and barriers.

The results identify substantial differences between men and women. Culture affects students' intentions, women have lower levels of entrepreneurial intentions, motives generally have a positive influence on intentions, barriers have a negative influence, men appear more influenced by motives, and women appear more influenced by barriers.

The results in China are different— there are no significant differences between men and women in perceptions and attitudes on many dimensions, and women's perceptions of motives and barriers bear no significant relationship to their intentions. Given the unique results that we found for Chinese respondents on many dimensions, studying entrepreneurship and gender in China may be especially useful.

Research on entrepreneurship and entrepreneurship education would be well served by focusing on the overlap of gender, culture, education, and psychology—this discussion is much needed. For example, although intrinsic and psychological factors are an important part of student views about entrepreneurship, higher education focuses mostly on specific knowledge and skills. We suggest it should explicitly attempt to develop students' psychological understanding and confidence. Since female students appear to care more than men about intrinsic motives, education should find ways to emphasize the value of intrinsic motives. And, entrepreneurship education needs to address better the differences in national culture—how can we give all students a better understanding of their own culturally-influenced psychology?

By devoting more attention to the impact of gender and culture on its students, entrepreneurship education is likely to raise students' entrepreneurial intentions, increase their entrepreneurial pursuits, and improve their chances of success and satisfaction.

INTRODUCTION

Entrepreneurship literature on gender and culture is growing, but more is needed (Radović-Marković, 2013). Previous research on gender and culture is mostly on existing entrepreneurs. There is little gender-oriented, cross-cultural comparative research on nascent

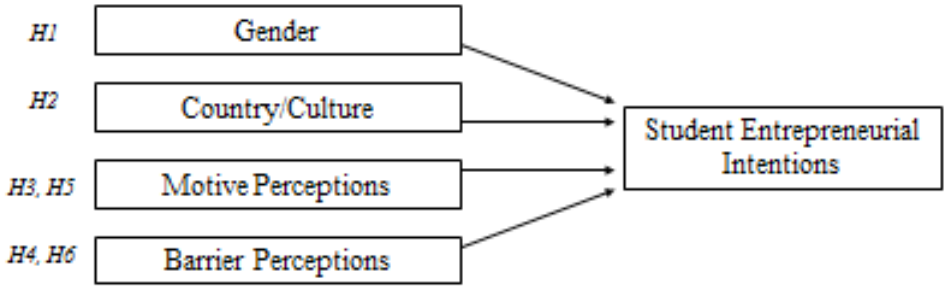
entrepreneurs (a recent exception is Kew, Herrington, Litovsky and Gale, 2013) and cross-cultural studies focused on college students are rare (e.g., Pruett, Shinnar, Toney, Llopis, and Fox, 2009). Thus, we survey university students from the United States, China, Belgium, and Turkey who may be at the beginning of entrepreneurial careers to study how gender, culture, and perceptions of motives and barriers influence entrepreneurial intentions.

After summarizing literature to develop a basic model of entrepreneurial intentions and hypotheses about gender, culture, and perceptions of motives and barriers, we discuss our method, findings, and conclusions, including implications for research and for education.

LITERATURE AND MODEL

Figure 1 below illustrates our model.

FIGURE 1
Model of Entrepreneurial Intentions



The Issue of Gender

A variety of research suggests that men are more likely than women to be entrepreneurs (e.g., Kickul, Wilson, Marlino and Barbosa, 2008; Minniti, Bygrave and Autio, 2005; Minniti and Nardone, 2007; Wilson, Marlino and Kickul, 2004). And, women have different entrepreneurship behaviors and motives (e.g., Robichaud, McGraw, Cachon, Bolton, Codina, Eccius-Wellmann, and Walsh, 2013).

These gender differences may have various causes. Men seem more inclined to take risks (Sexton and Bowman-Upton, 1990) and may have a greater locus of control (Mazzarol, Volery, Doss and Thein, 1999), more confidence (Bandura, 1992) or higher entrepreneurial self-efficacy (Sanchez and Licciardello, 2012; Zhao, Seibert and Hills, 2005). Self-efficacy, defined as the self-confidence that someone has the necessary skills or abilities to be an entrepreneur, may be more important for younger people (Wilson et al., 2004). We, too, believe experience and time should reduce gender differences—they should be more evident in nascent entrepreneurs, such as students at the beginning of their careers. Thus,

H1. Gender negatively affects entrepreneurial intentions of females.

The Issue of Culture

Culture, the distinctive mental programs shared by a group of people (Hofstede 1980), influences entrepreneurship (e.g., Avolio, 2012; Kew et al., 2013; Langowitz and Minniti,

2007). Cultural socialization of young people can teach gender stereotypes (Gupta and Bhawe, 2007; Jose and Orazio, 2012; Miller and Budd, 1999), collectivism may affect intentions (Holland, 2014), and women lack entrepreneurial role-models in some cultures (Klyver and Grant, 2010). Table 1 summarizes cultural difference data on our countries.

TABLE 1
Cultural Differences Among Study Countries

Hofstede's Cultural Dimensions	*US*	*China*	*Belgium*	*Turkey*
PD Power distance (higher score: society accepts inequality of power)	40	80	65	66
In Individualism (higher score: society focuses on individual more than group)	91	20	75	37
MF Masculinity/feminity (higher score: competitive, focused on extrinsic rewards)	62	66	54	45
UA Uncertainty avoidance (high score: low tolerance of ambiguity and risk)	46	30	94	85

Note: Data retrieved from Hofstede Centre, www.geert-hofstede.com

As shown in Table 1, Hofstede's (1980) model of culture has four dimensions: power-distance (egalitarian versus acceptance of inequality), individualism versus collectivism (I versus we orientation), masculinity-femininity (competitiveness and extrinsic rewards versus cooperation and intrinsic rewards), and uncertainty avoidance (tolerance of ambiguity in decision-making). These distinctive cultural attributes may affect entrepreneurship. High power-distance may limit entrepreneurial opportunity and freedom for many, making entrepreneurship less likely than in a low power-distance society. An individualistic society may encourage pursuit of individual entrepreneurial aspirations, while a collectivist one may discourage them. A culture which avoids uncertainty is likely to discourage entrepreneurial risk-taking and ambiguity. Last, a masculine culture appears likely to encourage a competitive viewpoint, perhaps making entrepreneurship more likely. Thus:

H2a. Cultural individualism is positively related to entrepreneurial intentions.

H2b. Cultural uncertainty avoidance is negatively related to entrepreneurial intentions.

H2c. Cultural power distance is negatively related to entrepreneurial intentions.

H2d. Cultural masculinity is positively related to entrepreneurial intentions.

Perceptions of Motives and Barriers

In addition to the influence of gender and culture on entrepreneurial intentions, individuals perceive motives and barriers, which may be intrinsic (e.g., desire for independence and risk aversion) or extrinsic (money and economic climate). Prior research with students shows that barriers and motives do matter (Birdthistle, 2008; Finnerty and Krzystofik, 1985; Sandhu, Sidique and Riaz, 2011)). We argue that pre-existing perceptions of motives and barriers

should be especially important for nascent entrepreneurs since they lack much experience, thus:

H3. The strength of perceptions regarding motives is positively related to entrepreneurial intentions.

H4. The strength of perceptions regarding barriers is negatively related to entrepreneurial intentions.

Men and women are likely to differ in their perceptions. Men are likely to perceive a larger network of entrepreneurial contacts (Klyver and Grant, 2010) and to have different motives (Humbert and Drew, 2010). Especially, they may have more self-confidence (Kirkwood, 2009) and a lower fear of failure (Shinnar, Giacomin and Janssen, 2012). Thus:

H5a. Perceptions of motives will have a greater impact for men than for women on entrepreneurial intentions.

H5b. Perceptions of barriers will have a greater impact for women than for men on entrepreneurial intentions.

Culture also may interact with perceptions of motives and barriers. Cultural individualism should encourage the pursuit of entrepreneurial motives. Uncertainty avoidance and power distance should raise the importance of barriers, and a masculine culture that encourages competition should strengthen individuals' valuation of motives. Thus:

H6a. Higher cultural individualism will increase the impact of motive perceptions on entrepreneurial intentions.

H6b. Higher cultural uncertainty avoidance will increase the impact of barrier perceptions on entrepreneurial intentions of students.

H6c. Higher cultural power distance will increase the impact of barrier perceptions on entrepreneurial intentions of students.

H6d. Higher cultural masculinity will increase the impact of motive perceptions on entrepreneurial intentions of students.

METHOD

Participants

Our survey sample consisted of 1526 university students (317 Americans, 333 Chinese, 417 Belgian, and 459 Turkish). 69.6% were from business departments, the rest were from across the campus—arts, communication, computer, engineering, education, history, languages, law, political science, sociology, sciences, and other departments. Almost half (47.6 %) were female. They were distributed relatively equally in terms of college level: 17.6 % of respondents were 1st-year students, 18.1 % were 2nd-year, 27.8 % were 3rd-year, 20.6 % were 4th-year, and 16.3% were graduate students.

Questionnaire and Measures

Our questionnaire was developed from one used previously by other authors (Genesca and Veciana, 1984; Veciana, Aponte and Urbano, 2005). American and Chinese students used a version written in English, Belgians a French version, and Turkish students a Turkish version. In China, verbal clarification was used as needed when students completed the surveys.

Respondents provided data on various individual factors (including entrepreneurial disposition and entrepreneurial intentions), perceptions of motives and barriers, and educational environment. Several of these factors are discussed in greater detail below.

Measuring disposition and intentions. The measurement of entrepreneurial disposition (or, alternatively, entrepreneurial self-efficacy) remains the subject of debate. McGee, Peterson, Mueller, and Sequeria (2009) found more than a dozen ways of measuring the concept—some studies they identified employed more than twenty dimensions to measure the concept —and Boissin, Branchet, Emin and Herbert (2009) noted that some studies do not detail how the variable is measured. Accordingly, our measure of entrepreneurial disposition derives from Bandura's (1977) original definition of self-efficacy as the belief an individual in his ability to carry out a job or set of tasks. Similar to the approach of Boissin et al. (2009), we measure students' perceptions of their ability with a seven-point Likert scale ranging from 1 (not at all entrepreneurial) to 7 (very entrepreneurial) to respond to the following: "On a scale of 1 to 7, indicate how much you consider yourself an entrepreneur, full of ideas and initiative to start a business".

Entrepreneurial intentions were measured in a similar manner using a four-point scale ranging from 1 (no, never) to 4 (yes, I have a definite plan to start my own business).

Measuring perceptions of motives and barriers. Similarly, we measured beliefs about 16 motives and 20 barriers using five-point Likert scales ranging from 'very unimportant' to 'very important'. We factor analyzed this data to aggregate motives and barriers, a process used by other researchers (e.g., Pruett et al., 2009). This process yielded five motive factors: pursuit of profit/social status, independence, creation, personal development, and professional dissatisfaction. It also yielded five barrier factors: lack of support structure and fiscal/ administrative costs, lack of knowledge/experience, economic climate/ lack of entrepreneurial competencies, self-confidence, and risk aversion. To test motive and barrier factor construct validity, we conducted a confirmatory factor analysis (CFA), which yielded acceptable fit.

FINDINGS

Regression Analysis

Table 2 below shows binary correlations. The masculinity/femininity dimension is excluded from further analysis due to multicollinearity (a very low tolerance score), so Hypotheses *H2d* and *H6d* were not tested. Table 3 shows the results of regressing culture, gender, and motive/barrier perceptions on entrepreneurial intentions, and Table 4 shows results for regressions separated by gender and country to explore H5a and H5b.

Table 3 supports several hypotheses. *H1* is supported—females have lower entrepreneurial intentions. Using a dummy variable with the value 1 for women, the coefficient for gender is significant and negative.

H2a is not supported—cultural individualism is not positively related to intentions. The coefficient for individualism is significant, but in the opposite direction. Higher individualism is related to lower intentions.

H2b is not supported—uncertainty avoidance is not negatively related to entrepreneurial intentions. The coefficient for uncertainty avoidance is significant, but in the opposite direction. When cultural uncertainty avoidance is higher, entrepreneurial intentions are higher.

H2c is supported—power distance is negatively related to entrepreneurial intentions. The coefficient for uncertainty avoidance is significant and negative. When cultural power distance is higher, entrepreneurial intentions are lower.

H3 is partly supported—the strength of perceived motives is positively related to intentions. In the regression, two of five motive factors are significantly and positively related to intentions—the pursuit of profit and social status, and the desire to create.

TABLE 2
Binary Correlations for Country, Gender, Motives, Barriers, and Intentions

	Mean	S.D	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Country			1												
2. Gender			.041	1											
3. Profit, status	3.55	.73	.243**	-.005	1										
4. Desire for indep.	4.24	.72	.152**	.077**	.408**	1									
5. Creation	3.99	.84	.257**	.127**	.385**	.480**	1								
6. Pers'l devel.	3.77	.99	.221**	.060*	.448**	.355**	.299**	1							
7. Prof'l dissat.	3.40	.86	.254**	.152**	.305**	.331**	.275**	.382**	1						
8. Lack of support	3.37	.77	.063*	.215**	.249**	.187**	.204**	.218**	.320**	1					
9. Lack knowl/exp.	3.59	.91	.064*	.217**	.233**	.225**	.208**	.249**	.302**	.588**	1				
10. Econ.clim./comp.	3.99	.74	.115**	.199**	.278**	.349**	.257**	.232**	.304**	.413**	.465**	1			
11. Lack self-conf.	3.30	.89	-.009	.210**	.266**	.189**	.195**	.191**	.284**	.520**	.559**	.399**	1		
12. Risk aversion	3.33	.93	.046	.184**	.209**	.106**	.105**	.191**	.309**	.427**	.431**	.438**	.461**	1	

13. Entre. Intent'ns	1.63	1.06	.516**	-.118**	.272**	.150**	.225**	.251**	.131**	-.054*	-.050	-.035	-.114**	-.133**	1

N = 1291 to 1536, missing cases excluded pairwise

*p<.05, **p<.01.

TABLE 3
Hierarchical Regression Coefficients for Entrepreneurial Intentions of Students

	B						
	Step 1 Gender	Step 2 Individualism	Step 3 UncerAvoid	Step 4 Power Dist	Step 5 Motives	Step 6 Barriers	Stand'zed *B* coeff full model
Intercept	2.003**	3.029**	2.357**	8.521**	7.692**	8.060**	19.278
Gender (dummy var)	-.252**	-.410**	-.373**	-.434**	-.439**	-.339**	-7.132
Culture							
Individualism		-.014**	-.017**	-.050**	-.048**	-.046**	-24.303
Uncertainty avoidance			.011**	.019**	.018**	.017**	16.875
Power distance				-.075**	-.071**	-.070**	-.877
Motives					.066	.126**	.087
Profit,social status							
Independence					-.015	.000	.000
Creation					.106**	.112**	.089
Personal devel.					.022	.035	.033
Prof.dissatisfaction					-.053	.008	.006
Barriers							
Support structure, costs						.009	.007
Knowledge & exper.						-.038	-.033
Econ. clim., lack. comp.						-.102**	-.072
Self-confidence						-.083**	-.069
Risk aversion						-.105**	-.093
Change in *F*	18.330**	196.508**	116.466**	478.428**	4.673**	16.633**	
Change in R^2	.014	.131	.071	.213	.010	.030	
Total model R^2	.014	.145	.216	.428	.438	.469	

Note. Dependent variable Student Entrepreneurial Intentions, $n = 1526$ *p<.05, **p<.01

TABLE 4:
Motive and Barrier Impacts on Entrepreneurial Intentions, Separated by Gender and Country

	β															
	Male								Female							
	American		Chinese		Belgian		Turkish		American		Chinese		Belgian		Turkish	
	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2
Profit & social status	.012	.063	.151	.201	.162	.179*	.064	.128	-.077	-.016	-.100	.005	.147	.163	-.028	.067
Desire indep.	-.053	-.013	-379*	-.348*	.008	.033	.167*	.167*	.176	.114	-.137	-.029	.170	.138	.047	.030
Creation	.284**	.300**	.035	.074	.099	.122	.267**	.207	.094	.117	.074	.084	-.116	-.089	.171*	.157*
Personal	.130	.133	-.088	-.149	.066	.079	-.053	-.03	.101	.145	.098	.180	.035	.063	.052	.097
Prof'l. dissat.	-.070	-.031	.031	.033	-.154	-.110	-.149*	-.029	.049	.005	.017	.008	-.094	-.111	-.165*	-.061
Support struc., fiscal admin costs		-.153		.104		.012		.125		-.078		-.233		.130		.119
Knowl. & exper.		.041		.107		-.063		.041		-.196		.127		-.021		-.065
Econ.clim., ent comp.		-.118		-.321*		-.213**		-.171*		-.042		-.224		-.025		-.055
Self-conf		-.137		.040		.027		-.152		-.232*		-.116		-.319**		-.147
Risk aver.		.010		.036		-.015		-.19		-.131		.104		-.082		-.239
F	3.268**	2.793**	1.347	1.921	1.917	1.919	7.118*	6.45	1.833	2.588	.521	.966	1.414	2.217	2.34	3.984
R²change	.096	.062	.165	.113	.048	.046	.147	.096	.075	.053	.028	.075	.063	.117	.046	.098
ΔR²	.096	.158	.165	.279	.048	.094	.147	.243	.075	.128	.028	.103	.063	.180	.046	.144

Note. All columns are standardized *β* values. *p<.05, **p<.01

H4 is partly supported—the strength of perceived barriers is negatively related to intentions. Three of five barriers are significantly and negatively related to intentions—economic climate/lack of entrepreneurial competencies, lack of self-confidence, and risk-aversion.

Table 4 shows partial support for *H5a* and *H5b*. *H5a* is partly supported—motive perceptions affect men more than women, with at least one significant motive in each country. In Belgium, profit and social status is significant for males. In Turkey, independence is significant and in the US and Turkey creation is significant. Strangely, in Chinese males, independence is negatively related to entrepreneurial intentions.

For women, motives do not explain entrepreneurial intentions. The sole exception is the desire to create for women in Turkey. Otherwise, across four distinct countries/cultures, women's perceptions of motives are unrelated to their entrepreneurial intentions.

However, barrier perceptions do help explain female intentions. *H5b* is partly supported—perceptions of barriers have a greater impact on the intentions of women. In three of four countries, males are negatively influenced by economic climate and lack of entrepreneurial competencies, and in Turkey risk aversion. For females, the story depends on intrinsic barriers. US and Belgian females are negatively affected by lack of self-confidence. For Turkish females, the standardized coefficients show that the negative influence of risk-aversion is greater than the positive influence of the desire to create. Except in China, fear seems to matter for females.

Overall, across countries the significant perceptions for woman are intrinsic, and mostly barriers. Male intentions are influenced by a mix of extrinsic and intrinsic motives and barriers.

Hypotheses 6a-6c are not supported—cultural dimensions do not increase the impact of motive and barrier perceptions on entrepreneurial intentions. We did a regression with interaction variables for individualism, uncertainty avoidance and power distance (e.g., Individualism* MotiveFactor1, the same for motive 2 and so on), but none of the interaction variables were significant.

ANOVA for Motives and Barriers

Table 5 shows mean scores and ANOVA results for perceptions of entrepreneurship motives. Table 6 shows mean scores and ANOVA results for perceptions of entrepreneurship barriers.

Regarding Table 5 below, ANOVA for motives, as noted earlier, students' perceptions of motives reduced to five factors: pursuit of profit and social status, desire for independence, desire to create, personal development, and professional dissatisfaction.

The gender difference was insignificant for all countries regarding the extrinsic motive of pursuit of profit and social status. That is, males and females attached similar importance to the motive.

However, for each and all of the *intrinsic* motive factors, there is a significant difference between genders in at least one country.

TABLE 5
ANOVA for Motives for Starting a Business

Country	Factor	Pursuit of profit and social status			Desire for independence			Creation			Personal development			Professional dissatisfaction		
		M	*SD*	*F*	*M*	*SD*	*F*	*M*	*SD*	*F*	*M*	*SD*	*F*	*M*	*SD*	*F*
US	M	3.59	0.683	1.342	4.37	0.738	1.851	3.84	0.795	12.952***	3.98	0.921	2.545	3.48	0.795	1.285
	F	3.50	0.649		4.48	0.639		4.18	0.833		3.81	0.864		3.58	0.777	
China	M	3.19	0.641	0.128	3.65	0.888	0.772	3.30	0.734	2.738*	3.33	0.918	1.030	2.84	0.636	0.893
	F	3.23	0.707		3.85	0.963		3.49	0.849		3.54	0.961		2.95	0.803	
Turkey	M	3.92	0.723	0.094	4.45	0.574	0.711	4.25	0.770	5.678**	4.13	0.834	11.765***	3.55	0.887	13.043***
	F	3.91	0.649		4.51	0.534		4.40	0.638		4.36	0.701		4.01	0.768	
Belgium	M	3.31	0.684	1.022	4.00	0.675	12.897***	3.82	0.838	12.695***	3.36	1.029	0.064	3.17	0.725	11.874***
	F	3.24	0.703		4.24	0.584		4.12	0.729		3.33	0.972		3.43	0.765	

*p<.10, **p<.05, ***p<.001.

TABLE 6
ANOVA for Barriers to Starting a Business

Factor		Lack of support structure & fiscal or administrative costs			Lack of knowledge & experience			Economic climate, lack of entrep. competencies			Lack of self-confidence			Risk aversion		
Country		*M*	*SD*	*F*	*M*	*SD*	*F*	*M*	*SD*	*F*	*M*	*SD*	*F*	*M*	*SD*	*F*
US	M	3.31	0.738	10.356***	3.61	0.925	12.820***	4.01	0.782	9.775**	3.33	1.187	4.997**	3.40	0.812	5.785**
	F	3.62	0.914		3.97	0.726		4.26	0.533		3.59	0.712		3.64	0.810	
China	M	3.22	0.545	0.864	3.51	0.776	0.252	3.64	0.829	0.200	3.16	0.619	0.531	3.21	0.854	0.629
	F	3.36	0.634		3.54	0.798		3.72	0.875		3.28	0.719		3.15	0.799	
Turkey	M	3.18	0.859	46.985***	3.42	1.02	53.494***	3.93	0.825	46.968***	2.99	0.958	56.146***	3.01	1.120	64.091***
	F	3.72	0.828		4.07	0.885		4.39	0.614		3.66	0.951		3.79	0.970	
Belgium	M	3.23	0.694	8.878**	3.32	0.851	7.804**	3.76	0.660	21.086***	3.07	0.759	10.756***	3.24	0.817	5.587**
	F	3.44	0.609		3.56	0.773		4.06	0.562		3.33	0.702		3.44	0.755	

*p<.10, **p<.05, ***p<.001.

For the desire for independence, in all countries the scores of females exceeded males, but the difference was significant only in Belgium.

For creation, the differences between genders were significant—female students viewed creation as more important than did males in all four countries.

For personal development, the differences between male and female students were insignificant in the US, China, and Belgium, but in Turkey the female students differed significantly, seeing personal development as more important than did the male students.

For professional dissatisfaction as a motive, female students' scores were higher than those of males in all countries—the difference was significant in Turkey and Belgium.

Regarding Table 6 above, ANOVA for barriers, students' barrier perceptions reduced to five factors: lack of support structure and fiscal or administrative costs, lack of knowledge and experience, economic climate and lack of entrepreneurial competencies, lack of self-confidence, and risk aversion.

The story for barrier perceptions is different than that for motives. In every country except China, men and women differ significantly on all barrier dimensions . And, females' barrier perceptions consistently exceed those of males. In China, where there are no gender differences in barrier perceptions. In other words, with the exception of China, men and women perceive barriers differently, and women consistently perceive them as higher.

Additional Analyses

Continuing the pattern of significant differences between males and females, Table 7 presents scores by country of male and female students' perceptions of the business start-up knowledge in the curriculum, the extent to which universities stimulate entrepreneurship, and students' entrepreneurial disposition and intentions. As shown, men and women differ significantly in eleven of the sixteen comparisons. That is, in two-thirds of the comparisons, men and women see things differently.

Skills in curriculum—Chinese and Belgian males and females have similar perceptions about the extent to which their curricula provide knowledge to prepare them to start businesses, with average scores somewhere between a little and some. However, there are significant differences in the US and Turkey.

University stimulation—US and Belgian males are significantly more positive than females about the extent to which their universities stimulate students to start businesses, with average scores between a little and some, while Chinese and Turkish students do not differ significantly by gender.

Entrepreneurial disposition—in three of four countries males had significantly greater entrepreneurial disposition (their internal sense of how entrepreneurial they are). There was no gender difference in China.

Entrepreneurial intentions—in all four countries men had significantly higher levels of intention than did women.

TABLE 7
University, Disposition, and Intentions

Factor	Country	Male		Female			
		M	*SD*	*M*	*SD*	*F*	*p*
Skills included in curriculum	US	2.54	0.892	2.17	0.911	13.022	.000
	China	2.52	0.735	2.53	0.847	0.210	.811
	Turkey	2.52	0.879	2.77	0.780	8.432	.000
	Belgium	1.80	0.757	1.92	0.742	2.618	.106
University stimulation	US	2.45	0.667	2.29	0.675	4.254	.040
	China	2.58	0.731	2.61	0.731	0.173	.841
	Turkey	2.39	0.856	2.39	0.956	0.001	.973
	Belgium	2.07	0.671	2.23	0.756	5.346	.021
Entrepreneurial disposition	US	4.64	1.402	3.72	1.557	29.587	.000
	China	3.75	1.466	3.67	1.350	0.180	.836
	Turkey	5.24	1.335	4.40	1.229	9.311	.000
	Belgium	4.00	1.398	3.61	1.319	7.138	.008
Entrepreneurial intentions	US	1.42	0.813	0.92	0.803	29.201	.000
	China	1.34	0.872	1.03	0.713	2.983	.049
	Turkey	1.93	0.871	1.37	0.785	8.201	.000
	Belgium	1.13	0.768	0.95	0.822	4.855	.028

DISCUSSION AND IMPLICATIONS

The analyses generally support our model. They show substantial differences between men and women. Culture affects students' intentions, women have lower levels of entrepreneurial intentions, motives generally have a positive influence on intentions, barriers have a negative influence, men appear influenced by motives, and women appear influenced by barriers.

Gender, Culture, Perceptions, and Intentions

The regression test of the full model showed that gender, cultural dimensions, and motive and barrier perceptions are significantly related to entrepreneurial intentions. Further, in separate regressions by country and gender, the model is significant in seven of eight instances (Chinese women were the only group for which the model did not have any significant explanatory power). In most cases, the significant factors were psychological or intrinsic ones. Belgian males were the only group for which the extrinsic profit-status motive was significant. Males in three countries (the U.S, China, and Turkey) saw the extrinsic barrier of economic climate/entrepreneurial competencies as significant. When other barriers and motives were significant, they were intrinsic—desire for independence or to create something, lack of self-confidence, and risk-aversion. Self-confidence or risk-aversion barriers were significantly related to women's entrepreneurial intentions in three of four countries.

In other research, Kew et al. (2013) find that teens and young adults are less likely to believe in their entrepreneurial skills in Asia, Europe, and the United States (the regions represented in our study). Those authors also find that fear of failure is important—35-45% of the youths

in those three regions say that fear of failure would prevent them from starting a business (Kew et al., 2013: p 35). Unlike our present study, Kew et al. did not assess the impact of gender on responses.

Barriers and Motives

For barriers, as shown in the ANOVA, there is a uniform difference across three countries (Turkey, the US, and Belgium)—in each case, women perceive each barrier as significantly more important than do men. In all fifteen barrier gender comparisons, women rate barriers higher. Further, the regression standardized beta (β) scores show that the impact of barriers is greater for women. More women believe barriers matter, and they believe barriers matter more, except in China, where there are no significant gender perception differences.

For motives, the results are different. When men and women differ, they differ on the psychological/intrinsic motives for entrepreneurship, not the material/extrinsic ones. Women rate intrinsic motives as stronger. Across countries, there are no gender differences in the importance of the profit/status motive. In Belgium, independence matters more to women, in Turkey personal development matters more to women, and in Turkey and Belgium professional dissatisfaction matters more to women. In all countries, the creation motive is significantly more important to women, and it is the only motive/barrier on which Chinese women differ.

Unsupported Hypotheses

Below we note possible explanations for the lack of strong support for several hypotheses.

H2a was not supported—cultural individualism was indeed significantly related to intentions, but negatively. This may perhaps be a consequence of our particular sample or of measurement methods.

H2b was not supported—uncertainty avoidance is indeed significantly related to intentions, but in a positive direction. This, too, may be a consequence of sampling or measurement.

H5a was partly supported—motive perceptions affect men more than women, with at least one significant motive in each country. However, with the exception of the desire to create for women in Turkey, women's perceptions of motives are unrelated to their entrepreneurial intentions across four distinct countries/cultures. We believe this may be due to the substantial impact of women's perceptions of barriers on intentions.

Hypotheses 6a-6c are not supported—cultural dimensions do not increase the impact of motive and barrier perceptions on entrepreneurial intentions. This is especially interesting, considering that the survey was carried out in four distinctive cultures. Perhaps cultural differences simply matter less, particularly in young people.

SO WHAT?—LIMITATIONS AND IMPLICATIONS

Limitations

There are several limitations of the present study. Measurement limitations are evident in empirical work. Within the field of entrepreneurship research, there is not common

agreement on how to measure concepts such as intentions and disposition (or, more generally, self-efficacy). So, the results are influenced by the choice of measures. Second, our cross-sectional data cannot tell us much about what will happen over time or whether the relationships we observed will continue to hold. Third, the sample is not evenly distributed across disciplines in the university—there is a preponderance of management/business students. This bias should not have a major impact on our results and interpretations, since the focus is on differences across countries and between genders, not on differences across students' fields of study.

Implications for Future Research

The difference in China. First, results in China are unique and pose a particularly interesting exception in a number of our analyses. There are no significant differences between Chinese men and women in perceptions and attitudes on a variety of dimensions; and the motive and barrier perceptions of Chinese women bear no significant relationship to their intentions. And, although Chinese males appear more likely to pursue entrepreneurship, they show no significant difference in disposition compared to Chinese females. Does this mean that Chinese males overstate their entrepreneurial intentions or does it, perhaps, indicate that there are external factors that limit Chinese women's entrepreneurial intentions even when they are psychologically inclined to pursue it? Given the unique results that we found for Chinese respondents on many dimensions, further gender research in China may be especially useful.

Gender differences. Second, the significant differences between men and women regarding perceptions of various barriers and motives appear especially noteworthy. Are women overrating barriers or are men underrating them? Do men underrate intrinsic motives? Certainly, additional research beyond our limited sample is needed to further explore the extent of these differences, the sources and consequences, the impact on entrepreneurial intentions and, perhaps, the relationship with further stages of the entrepreneurial process.

Overlaps with psychology. Third, psychology deserves a role—this paper began by noting the scarcity of cross-cultural research on gender, perceptions, and intentions. The results lead us to suggest that an important area for further entrepreneurship research is in the overlap of gender, culture, education, and psychology—discussion and research regarding psychology and entrepreneurship education is much needed.

Implications for Entrepreneurship Education

Our study suggests that addressing gender differences may help resolve the continuing debate about the effectiveness, content, and purpose of entrepreneurship education (Dhaliwal, 2010; Fayolle, 2008; Giacomin et al., 2011; Hoelscher, 2012; Jose and Orazio, 2012; Katz, 2003; Khadija, Usman, and Mohsin, 2012; Kirkwood, 2009; Lo, Sun, and Law, 2012; Nabi, Holden and Walmsley, 2010; Packham, Jones, Miller, Pickernell and Brychan, 2010; Peterman and Kennedy, 2003; Petridou, Sarri and Kyrgidou, 2009; Wu and Wu, 2008; Yordanova and Tarrazon, 2010).

Recent studies found that women's entrepreneurial intentions can be increased with entrepreneurship education programs (Jose and Orazio, 2012). Wilson, Kickul and Marlino (2007) state that entrepreneurship education increases the entrepreneurial intentions of

females more than males. However, they suggest that "one-size-fits-all" education may not be effective and that gender-specific approaches are needed. Petridou, Sarri and Kyrgidou (2009) emphasize that entrepreneurship education should focus on different subjects for males and females.

Addressing gender differences may make entrepreneurship education more effective (Cowling and Taylor, 2001; Wilson et al., 2007). Specifically, authors suggest that we need to address the gender-specific barriers to entrepreneurship (Petridou, Sarri and Kyrgidou, 2009), the negative perceptions women may hold about entrepreneurship (Yordanova and Tarrazon, 2010) and the self-efficacy and self-confidence of women (Dhaliwal, 2010; Jose and Orazio, 2012; Kirkwood, 2009).

The psychology of barriers. Education should focus more on the psychology of barriers. Intrinsic and psychological factors affect student perceptions (especially for women), but university education focuses mostly on knowledge and specific skills, not explicitly on students' psychological understanding and confidence. Psychological and social skills are crucial for entrepreneurs (Taatila, 2010), so perhaps developing self-reliant students should be a central purpose of entrepreneurship education (van Gelderen, 2010). To us, this seems more important than technical skills.

Emphasizing intrinsic motives. Education should emphasize intrinsic motives. Although women care more than men about intrinsic motives, this does not lead to an increase in female entrepreneurial intentions. Perhaps education should find ways to emphasize the value of intrinsic motives more than it apparently does.

Addressing cultural differences. Our results also demonstrate that entrepreneurship education should consider putting greater emphasis on addressing differences in national culture, for those differences affect both men and women. For example, education in a culture which avoids uncertainty perhaps should give students more tools with which to evaluate risk, and more experiences to raise their comfort with uncertainty. Similarly, education in a culture which places a lower value on individuality should address the psychological and practical conflicts which an entrepreneurially-minded student is likely to face. How can we give all students, male and female, a better understanding of their own culturally-influenced thinking?

By focusing on the impact of gender and culture on our students, entrepreneurship education is likely to raise students' entrepreneurial intentions, increase the likelihood that students will actually pursue entrepreneurship, and improve their chances of success and satisfaction.

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